Columbia River Chum Salmon ESU

Hatchery Program Assessment

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Summary

- 16 Historic Chum Populations In ESU

- 3 In ESU Artificial Propagation Programs that are integrated with 2 populations
  – Funding uncertain with two of these programs

- 0 Non-ESU Artificial Propagation Programs

Artificial Program Releases

- Sea Resources: 150,000

- Grays River: 400,000

- Washougal/Duncan: 100,000
  - Can increase to 500,000

Hatchery Listing Policy

Effects of hatchery fish on the likelihood of extinction of an ESU, depend on how hatchery fish affect four key attributes.

Effects on Abundance of ESU

- Sea Resources Program has increased the abundance of chum salmon in the Chinook River. Zero spawners from 1999-2001.

- Return of 295 in 2002, and 566 in 2003 from hatchery releases of Grays River chum salmon.

- Washougal/Duncan Creek designed to act as safety-net for Lower Gorge Populations.

- Historical Abundance was nearly 1 million chum.

Columbia River Chum Salmon Returns
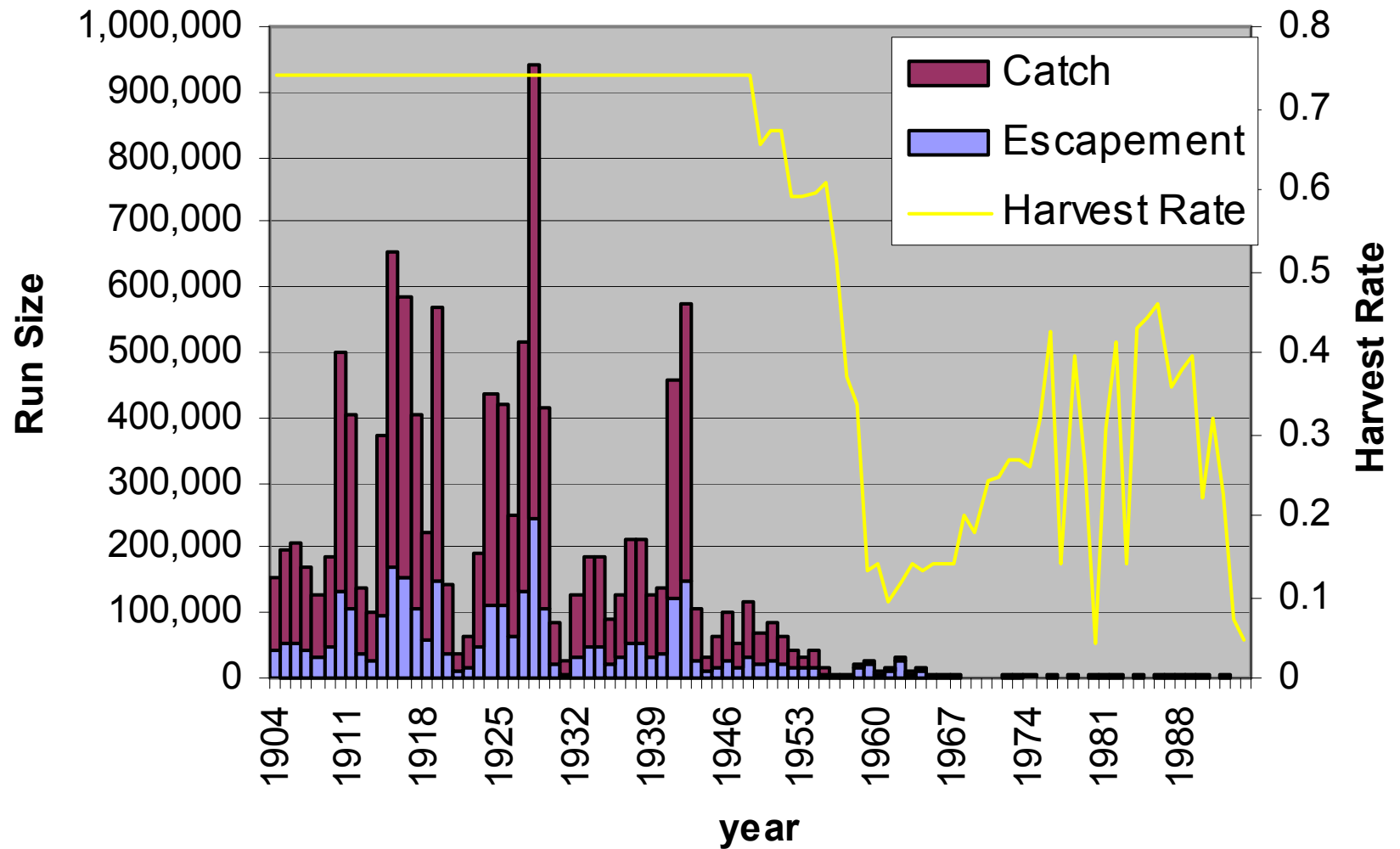
Effects on Productivity of ESU

- Unknown if naturally spawning program fish will be self sustaining in the Chinook River.
- These are new programs and their success is being evaluated through M&E programs.

Effects on Spatial Distribution of ESU

- Artificial propagation programs have increased the spatial distribution of the ESU.
- Sea Resources program has returned spawners to the Chinook River.
- Washougal Hatchery program has provided juveniles for release into newly available habitat in the Duncan Creek.

Washington

Grays River

Chinook River

Elochoman River

Columbia River

Big Creek

Mill Creek

Cowlitz River

Youngs Bay

Clatskanie River

Kalama River

Oregon

Lewis River

Scappoose Creek

Salmon Creek

Washougal River

U. Gorge Tribs

L. Gorge Tribs

Sandy River

Clackamas River

0   20   40   80 Kilometers
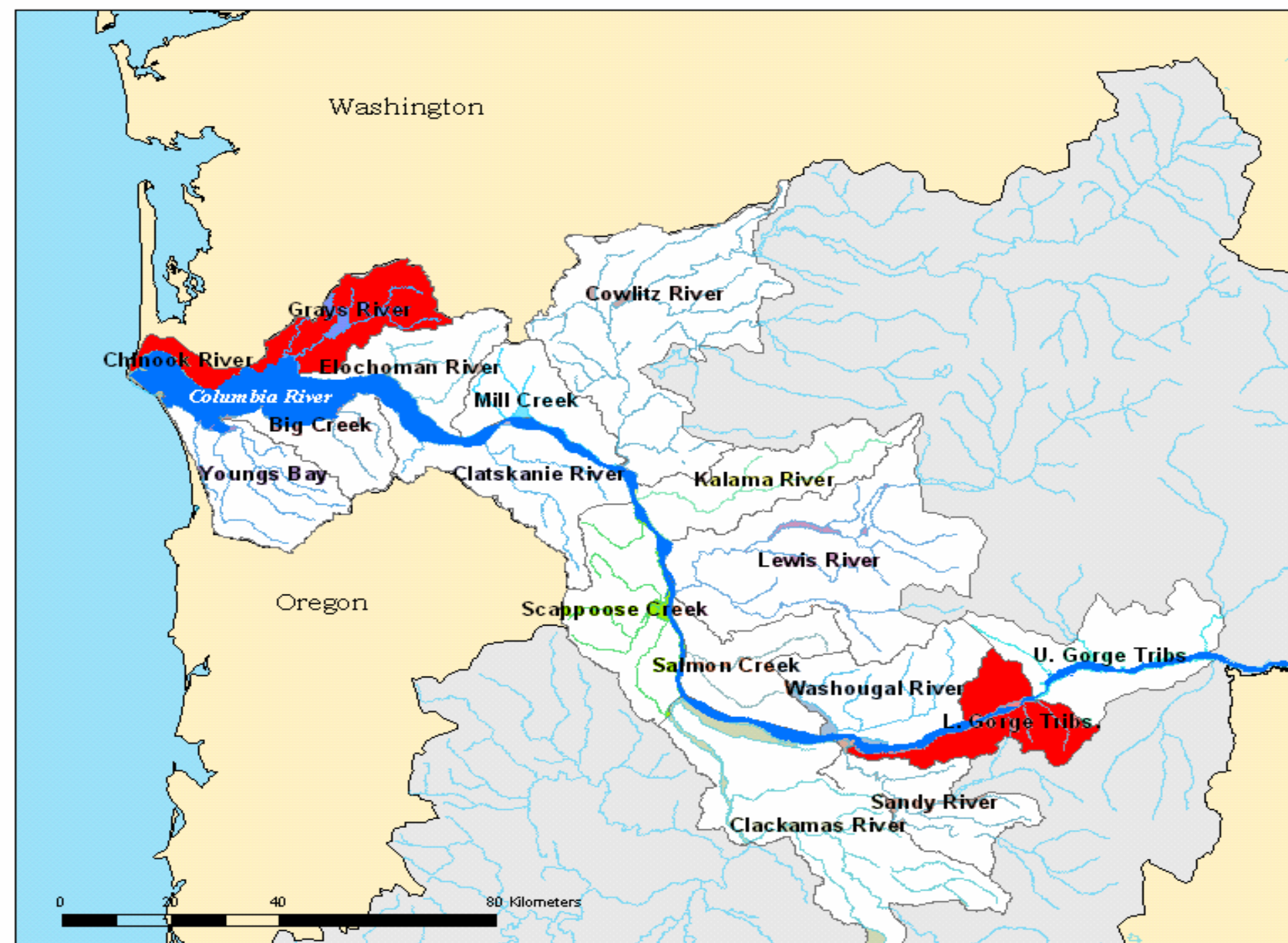
Effects on Diversity of ESU

- The artificial propagation programs have had a neutral effect on diversity of the ESU.

Effect of Artificial Propagation on VSP Attributes

Viability Criteria	BRT VSP Risk Score	Decreases Risk	Neutral or Uncertain	Increases Risk
Abundance	3.6	√		
Productivity	3.5		√	
Spatial Structure	4.6	√		
Diversity	3.9		√	

Recommendation: No Change Threatened

TRT Historic Populations and Artificial Propagation Programs

TRT Population	Artificial Propagation Program
Youngs Bay	
Grays River	Grays River Chum Salmon Program
	Sea Resources Chum Salmon Program
Big Creek	
Elochoman River	
Clatskanie River	
Mill, Abernathy, Germany	
Scappoose Creek	
Cowlitz River	

TRT Historic Populations and Artificial Propagation Programs

TRT Population	Artificial Propagation Program
Kalama River	
Lewis River	
Salmon Creek	
Clackamas River	
Sandy River	
Washougal River	
Lower Gorge Tributaries	Washougal/Duncan Creek Chum Salmon Program
Upper Gorge Tributaries	